

## CLAIMS

1        1. A method of providing authentication for a network-based transaction,  
2        the method comprising:

3                presenting a first information set to a user through an Internet ac-  
4                cess device, the first information set being associated with the transaction;

5                creating a coupling between the first information set and a second  
6                information set, wherein the second information set is also associated with  
7                the transaction;

8                presenting the second information set to the user and requesting  
9                authorization of the transaction at a mobile terminal using public land mo-  
10                bile network (PLMN) radio resources; and

11                receiving authorization information for the transaction from the mo-  
12                bile terminal using the PLMN radio resources.

1        2. The method of claim 1 wherein creating the coupling further comprises  
2        sending a wireless application protocol (WAP) push message to the mobile termin-  
3        al.

1        3. The method of claim 1 wherein the authorization information comprises  
2        client-side public key infrastructure (PKI) information.

1           4. The method of claim 2 wherein the authorization information comprises  
2   client-side public key infrastructure (PKI) information.

1           5. The method of claim 1 wherein the authorization information comprises  
2   a password.

1           6. The method of claim 5 wherein the authorization information further  
2   comprises a caller line identification (caller ID) for the mobile terminal.

1           7. A method of authorizing a transaction in which transaction information is  
2   presented to a user at an Internet access device in a first information set in a first  
3   format suitable for presentation on the Internet access device, the method com-  
4   prising:

5                 creating a second information set in a second format suitable for  
6                 presentation at a mobile terminal, wherein the second information set is  
7                 representative of the first information set;

8                 linking the first information set and the second information set;

9                 sending the second information set to a public land mobile network  
10                 (PLMN) for presentation to the user at the mobile terminal; and  
11                 receiving authentication information from the mobile terminal through  
12                 the PLMN.

1           8. The method of claim 7 wherein linking the first information set and the  
2   second information set further comprises sending a wireless application protocol  
3   (WAP) push message to the mobile terminal.

9. The method of claim 8 wherein the WAP push message comprises a  
hyperlink to the second information set.

1 10. The method of claim 9 wherein the first information set is formatted in  
2 hypertext markup language (HTML) and the second information set is formatted in  
3 wireless markup language (WML).

11. The method of claim 10 wherein the second information set is further  
2 formatted to be signed by a user using a WAP signText script.

12. The method of claim 7 wherein the authentication information comprises client-side public key infrastructure (PKI) information.

1           13. The method of claim 8 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1           14. The method of claim 9 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1           15. The method of claim 10 wherein the authentication information com-  
2 prises client-side public key infrastructure (PKI) information.

1           16. Apparatus for providing authentication for a network-based transaction,  
2 the apparatus comprising:

3           means for presenting a first information set to a user through an  
4           Internet access device, the first information set being associated with the  
5           transaction;

6           means for creating a coupling between the first information set and a  
7           second information set, wherein the second information set is also associ-  
8           ated with the transaction;

9           means for presenting the second information set to the user and re-  
10           questing authorization of the transaction at a mobile terminal using public  
11           land mobile network (PLMN) radio resources; and

12                   means for receiving authorization information for the transaction  
13                   from the mobile terminal using the PLMN radio resources.

1                   17. Apparatus for authorizing a transaction in which transaction information  
2                   is presented to a user at an Internet access device in a first information set in a  
3                   first format suitable for presentation on the Internet access device, the apparatus  
4                   comprising:

5                   means for creating a second information set in a second format suit-  
6                   able for presentation at a mobile terminal, wherein the second information  
7                   set is representative of the first information set;

8                   means for linking the first information set and the second information  
9                   set;

10                   means for sending the second information set to a public land mo-  
11                   bile network (PLMN) for presentation to the user at the mobile terminal; and

12                   means for receiving authentication information from the mobile ter-  
13                   minal through the PLMN.

1                   18. A computer program product comprising a computer program for  
2                   authorizing a transaction in which transaction information is presented to a user at  
3                   an Internet access device in a first information set in a first format suitable for  
4                   presentation on the Internet access device, the computer program further com-  
5                   prising:

6               instructions for creating a second information set in a second format  
7               suitable for presentation at a mobile terminal, wherein the second informa-  
8               tion set is representative of the first information set;

9               instructions for linking the first information set and the second infor-  
10               mation set;

11               instructions for sending the second information set to a public land  
12               mobile network (PLMN) for presentation to the user at the mobile terminal;

13               and

14               instructions for receiving authentication information from the mobile  
15               terminal through the PLMN.

1               19. The computer program product of claim 18 wherein the instructions for  
2               linking the first information set and the second information set further comprise  
3               instructions for sending a wireless application protocol (WAP) push message to  
4               the mobile terminal.

1               20. The computer program product of claim 19 wherein the WAP push  
2               message comprises a hyperlink to the second information set.

1        21. The computer program product of claim 20 wherein the first information  
2    set is formatted in hypertext markup language (HTML) and the second information  
3    set is formatted in wireless markup language (WML).

1        22. The computer program product of claim 21 wherein the second infor-  
2    mation set is further formatted to be signed by a user using a WAP signText  
3    script.

1        23. The computer program product of claim 18 wherein the authentication  
2    information comprises client-side public key infrastructure (PKI) information.

1        24. The computer program product of claim 19 wherein the authentication  
2    information comprises client-side public key infrastructure (PKI) information.

1        25. The computer program product of claim 20 wherein the authentication  
2    information comprises client-side public key infrastructure (PKI) information.

1        26. The computer program product of claim 21 wherein the authentication  
2    information comprises client-side public key infrastructure (PKI) information.

1           27. A network that enables authentication of a transaction comprising:  
2                   a server system operable to create a first information set formatted  
3                   for an Internet access device and a second information set formatted for a  
4                   mobile terminal, the second information set representative of the first infor-  
5                   mation set which is in turn representative of the transaction, the server  
6                   system further operable to create a coupling between the first information  
7                   set and the second information set;

8                   an Internet connection at the server system; and  
9                   a public land mobile network (PLMN) infrastructure operatively con-  
10                  nected to the server system so as to be operable to present the second in-  
11                  formation set at the mobile terminal and obtain authorization information  
12                  from the mobile terminal so that the transaction can be authenticated by the  
13                  server system.

1           28. The network of claim 27 wherein creating the coupling between the  
2           first information set and the second information set is accomplished at least in part  
3           by sending a wireless application protocol (WAP) push message to the mobile  
4           terminal.

1           29. The network of claim 28 wherein the WAP push message comprises a  
2        hyperlink to the second information set.

1           30. The network of claim 27 wherein the authentication information com-  
2        prises client-side public key infrastructure (PKI) information.

1           31. The network of claim 28 wherein the authentication information com-  
2        prises client-side public key infrastructure (PKI) information.

1           32. The network of claim 29 wherein the authentication information com-  
2        prises client-side public key infrastructure (PKI) information.

1           33. A system for authorizing a transaction in which transaction information  
2        is presented to a user at an Internet access device in a first information set in a  
3        first format suitable for presentation on the Internet access device, the system  
4        comprising:

5                a hypertext markup language (HTML) server operable to provide  
6        content for the first information set and to create a coupling between the  
7        first information set and a second information set;

8 a wireless markup language (WML) server operable to create the  
9 second information set in a format suitable for presentation on a wireless  
10 terminal, wherein the second information set is representative of the first  
11 information set, the WML server operatively connected to the HTML server;  
12 and

13 a network connection for the system operable to enable the WML  
14 server to send the second information set over a public land mobile net-  
15 work (PLMN) for presentation to the user at the mobile terminal and receive  
16 authentication information from the mobile terminal.

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1           34. The system of claim 33 wherein the WML server and the HTML server  
2   operate on a single computing platform.

1           35. The system of claim 33 wherein the network connection is an Internet  
2           connection.

1           36. The system of claim 33 wherein the coupling is created at least in part  
2    by sending a wireless application protocol (WAP) push message to the mobile  
3    terminal.

1           37. The system of claim 34 wherein the coupling is created at least in part  
2    by sending a wireless application protocol (WAP) push message to the mobile  
3    terminal.

1           38. The system of claim 35 wherein the coupling is created at least in part  
2    by sending a wireless application protocol (WAP) push message to the mobile  
3    terminal.

1           39. The system of claim 33 wherein the authentication information com-  
2    prises client-side public key infrastructure (PKI) information.

1           40. The system of claim 34 wherein the authentication information com-  
2    prises client-side public key infrastructure (PKI) information.

1           41. The system of claim 35 wherein the authentication information com-  
2    prises client-side public key infrastructure (PKI) information.

1           42. The system of claim 36 wherein the authentication information com-  
2    prises client-side public key infrastructure (PKI) information.